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ABSTRACT

The purpose of this study was to collect normative data on the reinforcement repertoires of teachers while interacting with lower and middle class students. Previous research suggests that the closer the values and social goals of students and their teachers, the more likely that positive classroom interaction would occur. It was therefore hypothesized that middle class teachers would positively reinforce their middle class students more frequently than their lower class students. Because social class groups respond differently to various kinds of reinforcement, it was hypothesized that those reinforcers which prove most effective for each group would, in time, be recognized and employed by the teachers. Hence, it was expected that verbal reinforcers would be observed more often with middle class students, and non-verbal reinforcers with lower class students. Schedules of teacher reinforcement for lower and middle class, white students were recorded with a systematic observational technique, the Teacher Reinforcement Schedule. Twenty minutes of recordings were made by six observers within each of 24 fifth and sixth grade classes. At both grade levels, classes were equally divided into those with predominantly lower or middle class students. Significantly more total reinforcements were given to middle than to lower class children. (Author/JM)

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Abstract

Schedules of teacher reinforcement for lower and middle class, white students were recorded with a systematic observational technique (Teacher Reinforcement Schedule). Twenty minutes of recordings were made by 6 observers within each of 24 fifth and sixth grade classes. At both grade levels, classes were equally divided into those with predominantly (minimum 85%) lower or middle class students. Significantly more total reinforcements were given to middle than to lower class children. This resulted mainly from between group differences on 3 of the 6 Teacher Reinforcement Schedule scales (Tangible Reward, Attending, Feedback). By combining categories, it was also shown that middle class students received significantly more non-verbal reinforcements than lower class students. However, a reliable difference in frequency of verbal reinforcement was not observed.

Frequency and Types of Teacher Reinforcement Given to Lower and Middle Class Students

Philip Friedman, Northwestern University

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Numerous studies have suggested that middle class children are more likely than lower class children to receive positive teacher reinforcement in the classroom. Charters (1963) reviewed the literature on the social background of teaching, and considered the problem of teachers as purveyors and imposers of middle class culture. While the research he reported was not conclusive, the major evidence indicated that middle class ways have been especially rewarded in the classroom. In studies with disadvantaged, black, preschool children (Gray, 1964, 1965; Gray and Klaus, 1964) a repeated observation was that reinforcement was essentially for appearance, neatness, attractiveness and especially for "manners and docility". Since many of these traits are emphasized less in the lower than the middle class home, disadvantaged children generally receive less reinforcement in the classroom. Boocock (1966) emphasized that given teachers, like most people, tend to 'hold' the values of their own class, they will tend to have and express more positive feelings towards middle class pupils. One study (Becker, 1962) found that teachers perceived their lower class students as more difficult to control, possessing lower moral standards, and generally less "acceptable"

than their middle class children and less deserving of reinforcement.

While the literature suggests social class differences in amounts and types of reinforcement received, most of the empirical studies have concentrated on the differential reaction of middle and lower class children to various types of positive reinforcement (Stevenson, 1967). For example, Rosenhahn (1966) demonstrated that the approval reinforcer "right" was more effective in motivating middle than lower class children. On the other hand, inexpensive material rewards were found to be effective in motivating lower class children, but had little effect on middle class children (Terrel, Durkin, and Wisely, 1959). An extensive summary of studies comparing the effects of praise and reproof on children varying in social class and other individual characteristics was made by Kennedy and Willicut (1964). A primary conclusion was that a fuller understanding of social class differences in learning requires an assessment of the typical reinforcement frequencies present in the child's environment.

The purpose of this study was to collect normative data on the reinforcement repertoires of teachers while interacting with lower and middle class students. According to the above research, the closer the values and social goals of students and their

teachers the more likely that positive classroom interaction would occur. It was, therefore, hypothesized that middle class teachers would positively reinforce their middle class students more frequently than their lower class students. Because social class groups respond differently to various kinds of reinforcement, it was hypothesized that those reinforcers which prove most effective for each group would, in time, be recognized and employed by the teachers. Hence, it was expected that verbal reinforcers would be observed more often with middle class students, and non-verbal reinforcers with lower class students.

Method

Materials. The Teacher Reinforcement Schedule (Friedman, 1971), an instrument designed to allow a single, naive observer to objectively discriminate and record among 26 separate categories of reinforcement was used to collect data. The categories were designed partly from modifications of items constructed for three separate systematic observational instruments: Observation Schedule and Record 4V (Medley and Mitzel, 1965), ADI Auxiliary Publications Project, Document No. 9617 (Charlesworth and Hartup, 1967), and Interaction Analysis (Flanders, 1960). They were intended to be fairly exhaustive in covering classes of verbal and non-verbal stimuli that may be considered

reinforcing to children. The list of items were representative of the "generalized reinforcers" described by Skinner (1964), and were divided into six major reinforcement dimensions (Support and Approval, Attention, Feedback, Cooperation, Personal Acceptance, Tangible Reward).

Subjects. Recordings were made of the teacher-student interactions within 24 fifth and sixth grade classrooms. These classes were selected and grouped according to the predominant (minimum 85%) social class background of the students. On the bases of several economic and social criteria, half of the classes were classified as lower class, and the other half as middle class. To distinguish the effects of social class from race differences, only classes with at least 90% white students were used in the study. All of the teachers were white, middle class, females.

Procedure. Observations were made over an 8-month period by six paid college students. These observers were given extensive training by the author on the categories of the Teacher Reinforcement Schedule. Before recording in any classroom, a meeting was arranged with the teacher to inform her that an observer would be in the room; however, no indication was given of the kinds of data to be collected. The observer would spend at least 15-minutes in the room prior

to categorizing his observations, allowing the teacher and pupils to become accustomed to his presence. Two visits to each class were made by every observer. On each visit, a single recorder tabulated the teacher's reinforcements for two 5-minute sessions.

Results

For purposes of the analyses the research design was 3-dimensional, with two of the factors being considered as repeated measures. The between-subjects factor was the sociometric background of the students (Pupil SES); the within-subjects factors were 1) the recordings made by different observers of the same teacher (Observers), and 2) the two visits by an observer to each classroom (Trials). There were seven dependent variables recorded for each teacher. The six reinforcement dimensions on the Teacher Reinforcement Schedule, as well as the total of these reinforcement categories, were studied in separate analyses.

Preliminary tests were made of the assumptions concerning patterns of the variance-covariance matrices required for a repeated measures design (Winer, 1962). The results of these chi-square analyses indicated the necessary homogeneity of covariance matrices, and symmetry of the pooled covariance matrix.

A summary of results of the analyses of variance is given in Table 1. The repeated measures analyses did not reveal any significant differences among observers. This indicated some degree of consistency in recording among observers viewing the same classroom teacher. There were also no significant main effects of Trials, suggesting some stability in teacher behavior over time. For the analysis with total reinforcements as the dependent variable, middle class students received significantly more reinforcement than lower class students, $F(1, 22) = 5.11$, $p < .05$.

Of the six separate dimensions of reinforcement, three of the analyses did show significant social class differences (see Table 1). However, the direction of these effects were inconsistent. Two of the analyses (Tangible Reward, Attending) revealed significantly higher reinforcement scores for middle class students, while a third (Feedback) showed a significant difference in the opposite direction. The difference in the Attending dimension was the most apparent result, contributing most to the mean difference in overall reinforcements between the two groups.

It was noted that the two dimensions which had significantly higher mean scores for middle class students were heavily weighted with non-verbal reinforcement categories.

On the other hand, the reinforcement schedules which were used with lower class students were primarily verbal. The data were, therefore, reanalyzed with respect to verbal and non-verbal reinforcements. For each teacher, frequencies of verbal and non-verbal reinforcements were tabulated. As anticipated, middle class students were given significantly more non-verbal reinforcements than lower class students, $F(1, 44) = 9.30$, $p < .01$. On the other hand, there was no reliable difference between the two groups in terms of frequency of verbal reinforcements, $F(1, 44) = 3.06$, $p > .10$.

Discussion

Although the results are not completely consistent, there were indications that a pattern of more favorable classroom climate existed for middle than for lower class students. These findings may have implications for often observed differences in both school achievement and attitude between the two social class groups. It also suggests that teachers may view their roles differently when interacting with students from different areas.

Differences between the two social class groups were observed with respect to the kinds of reinforcement employed by the teachers. Such qualitative differences suggest the importance of partitioning the general concept of classroom

reinforcement into its more specific components, and observing their effects in different situations and with different groups of students. In most investigations of behavior change through operant techniques, one or two kinds of reinforcement have been arbitrarily chosen, with little consideration of their appropriateness for the selected sample of students. It would seem that the effectiveness of behavior modification procedures may be greatly enhanced by preliminary observational study of the types of reinforcements which work best with different groups of students.

When frequencies of verbal and non-verbal reinforcements were considered, results of the analyses did not support those hypothesized. The data indicated that more non-verbal reinforcement was employed with middle than lower class children. It should be pointed out that the majority of reinforcers classified as non-verbal were in the Attending dimension. Further, the major source of difference favoring middle class children were frequency tabulations for categories in this Attending dimension. These findings may be attributed to the smaller class sizes observed in schools with predominantly middle class children. Fewer students certainly permit more individual help and attention on the part of the teacher. Smaller classes also allow for more personal and physical teacher-student interaction, helping to explain the greater

frequency of non-verbal reinforcement in middle class schools.

The results also demonstrated the potential of the Teacher Reinforcement Schedule for examining verbal and non-verbal interactions in the natural school environment. Social class differences were pinpointed in both frequency and types of reinforcements received. Further research should concentrate on the effects of these differences on various student behaviors.

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Table 1

SUMMARY OF REPEATED MEASURES ANALYSES OF VARIANCE FOR SOCIAL CLASS COMPARISONS OF TEACHER REINFORCEMENT SCORES

Source of Variation	df	Supporting (F)	Attending (F)	Feedback (F)	Cooperation (F)	Acceptance (F)	Tangible Reward (F)	Total (F)
Between subjects	23							
Pupil SES (A)	1	1.06	12.84**	5.71*	2.16	2.44	4.72*	5.11*
Subjects/Groups	22							
Within subjects	264							
Observers (B)	5	< 1.00	< 1.00	1.21	< 1.00	1.34	< 1.00	< 1.00
A X B	5	2.47*	< 1.00	1.63	< 1.00	< 1.00	1.82	< 1.00
B X Subj./Grps.	110							
Trials (C)	1	1.27	< 1.00	< 1.00	1.73	< 1.00	< 1.00	2.01
A X C	1	< 1.00	< 1.00	1.27	< 1.00	< 1.00	< 1.00	< 1.00
C X Subj./Grps.	22							
B X C	5	< 1.00	1.84	1.89	< 1.00	2.31*	2.04	1.99
A X B X C	5	< 1.00	2.46*	1.14	2.27*	1.94	3.24**	< 1.70
B X C X Subj./Grps.	110							

*$p < .05$

**$p < .01$

TEACHER REINFORCEMENT SCHEDULE

Teacher's Name_____ Rm #_____ School_____ Dist._____

Teacher's Sex_____ Grade_____ Subject_____ Obs. Date_____

Trial 1 Time_____ Trial 2 Time_____ Observer's Name_____

Observe the Teacher for 5 Minutes on Each of 2 Trials

	Trial 1	Trial 2
1. Offer. of Supp. or Approval		
Offering Praise		
Offering Approval		
Off. Encourage.		
Giving Support		
2. Attention		
Attending		
Smiling & Laugh.		
Gest. of Acknow.		
Verbal Help		
Instrumental Help		
3. Immed. Pos. Feedback to Interchange		
Pup. NSI Positive		
Pupil SI Positive		
Pup. Resp. Acc./Ack.		
Pupil Resp. Approve		
Pupil Resp. Support		
4. Cooperation		
Acceptance (Idea)		
Acceptance (Help)		
Compromise'		
Yield to Demand		
5. Personal Acceptance		
Physical Affection		
Verbal Affection		
Considering		
Sympathy		
Forgiving or Remorse		
6. Tangible Reward		
Spont. Token Giving		
Token Reward		
Use of Mat. or Equip.		

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SUMMARY OF CATEGORIES ON THE TEACHER REINFORCEMENT SCHEDULE

1. Offerings of support or approval--statements or gestures offering reinforcement that are not immediate feedback to a pupil's behavior, but which definitely indicate acceptance or correctness of another's behavior--are classified as follows:
   (categories are ordered in terms of degree of acceptance or emotion attached to the behavior--lowest to highest)
   A. OFFERING APPROVAL. A statement or gesture which clearly indicates acceptance of another's behavior
   B. OFFERING ENCOURAGEMENT. A statement or gesture designed to give hope or confidence to another.
   C. OFFERING PRAISE. A statement or gesture showing enthusiasm for another's behavior.
   D. GIVING SUPPORT. A statement or gesture indicating that one advocates a position previously associated with another, and will clearly back him on this stand.

2. Attention--statements, actions, or gestures offering reinforcement that are not immediate feedback to a pupil's contribution and which do not directly indicate acceptance or correctness of another's behavior--are classified as follows:
   A. ATTENDING. A statement or gesture indicating that the teacher was carefully heeding or concentrating on another's behavior.
   B. SMILING AND LAUGHING. A widening of the mouth, with parted lips, indicating pleasure, amusement, or favor.
   C. VERBAL HELP. A statement of offering or providing assistance to another.
   D. INSTRUMENTAL HELP. Non-verbal actions providing assistance for a pupil.
   E. GESTURE OF ACKNOWLEDGEMENT. Activity which indicates awareness of another's presence.

3. Immediate positive feedback to an interchange--immediate reactions in a positive manner to a pupil's contribution--are classified as follows:
   A. PUPIL INITIATED NON-SUBSTANTIVE INTERCHANGE--POSITIVE RESPONSE. Pupil initiated questions which do not refer to content to be learned, which the teacher supports, approves, or accepts.
   B. PUPIL INITIATED SUBSTANTIVE INTERCHANGE--POSITIVE RESPONSE. Pupil initiated question which refers to content to be learned, which the teacher supports, approves, or accepts.
   C. PUPIL RESPONSE--ACCEPTED OR ACKNOWLEDGED. After the pupil has responded to a question, the teacher clearly indicates recognition of the response, but not whether it is correct or incorrect.
   D. PUPIL RESPONSE--APPROVED. After the pupil has responded to a question, the teacher clearly indicates what the pupil has said is correct or acceptable, but praise is not given.
   E. PUPIL RESPONSE--SUPPORTED. After the pupil has responded to a question, the teacher clearly indicates with praise or enthusiasm that what the pupil has said is correct or acceptable.

4. Cooperation--receiving or submitting to an order, idea, or offering of help with pleasure, cooperation, or compromise.
   (categories are ordered in terms of degree of yielding to another--lowest to highest)
   A. COMPROMISE OR COOPERATION. Teacher responds to an idea, a demand, or an offering of assistance with a gesture or utterance of mutual concession or of working together.
   B. ACCEPTANCE OF AN IDEA. Teacher makes a pleasurable verbal or non-verbal response to pupil idea.
   C. ACCEPTANCE OF HELP. Teacher makes a pleasurable verbal or non-verbal response to the offering of assistance from a pupil.
   D. YIELDING TO A DEMAND. Teacher clearly submits to a demand made by a pupil.

5. Personal acceptance--actions showing emotion or sensitivity for a pupil--are classified as follows:
   A. PHYSICAL AFFECTION. Emotional gestures involving bodily or material actions.
   B. VERBAL AFFECTION. Utterances showing emotional attachment.
   C. SYMPATHY. A statement or gesture indicating pity or compassion for another
   D. CONSIDERING. A statement or gesture revealing thoughtfulness or sensitivity to pupil feelings.
   E. FORGIVING OR REMORSE. An indication of giving up resentment against another, or admission of guilt to another.

6. Tangible reinforcement--the offering of material reinforcements--are classified as follows:
   A. TOKEN GIVING. The giving of tangible, physical objects such as toys or food to pupils spontaneously.
   B. TOKEN REWARD. The giving of tangible, physical objects as a reward for previous behavior.
   C. USE OF MATERIALS AND EQUIPMENT. Offering the use of classroom facilities under the control of the teacher in response to pupil behavior.